

RESEARCH GROUP: MOLECULAR DYNAMICS OF COMPLEX SYSTEMS

Publications in peer review Journals

1. B.J.C. Cabral, K. Coutinho, S. Canuto - Electronic properties of liquid hydrogen fluoride: A sequential quantum mechanical / Born-Oppenheimer molecular dynamics approach, *Chemical Physics Letters* 495 (1-3) (2010), 40-45.
2. H.F.M.C. Martiniano, B.J.C. Cabral - Electron binding energies of free base porphyrin and magnesium-porphyrin: A sequential Born-Oppenheimer molecular dynamics / quantum mechanics approach, *Journal of Molecular Structure-Theochem* 946 (1-3) (2010), 26-32.
3. N. Galamba - Molecular Dynamics Study of the Vaporization of an Ionic Drop. *Journal of Chemical Physics* 133 (2010), 124510.
4. R.A. Mata, B.J.C. Cabral - QM/MM Approaches to the Electronic Spectra of Hydrogen-Bonding Systems with Connection to Many-Body Decomposition Schemes, *Advances in Quantum Chemistry* 59 (2010), 99-144.
5. S. Canuto, K. Coutinho, B.J.C. Cabral, V.G. Zakrzewski, J.V. Ortiz - Delocalized water and fluoride contributions to Dyson orbitals for electrodetachment from the hydrated fluoride anion, *Journal of Chemical Physics* 132 (21) (2010), 214507.
6. T.S. Almeida, B.J.C. Cabral - Ab initio approach to the electronic properties of sodium-ammoniaclusters: Comparison with ammonia clusters, *Journal of Chemical Physics* 132 (9) (2010), 094307.

RESEARCH GROUP: ANALYSIS AND GEOMETRY IN MATHEMATICAL PHYSICS

Publications in peer review Journals

1. C. Bastos, N.C. Dias, J.N. Prata - Wigner measures in noncommutative quantum mechanics, *Commun. Math. Phys.* 299 (2010), 709-740.
2. C. Bastos, O. Bertolami, N.C. Dias, J.N. Prata - The singularity problem and phase-space non-canonical noncommutativity, *Phys. Rev. D* 82 (2010), 041502.
3. C. Bastos, O. Bertolami, N.C. Dias, J.N. Prata - Noncommutative black holes, *J. Phys.: Conf. Ser.* 222 (2010), 012033.
4. D. Borisov, P. Freitas - Asymptotics of Dirichlet eigenvalues and eigenfunctions of the Laplacian on thin domains in \mathbb{R}^d , *J. Funct. Anal.* 258 (2010), 893-912.

5. N.C. Dias, J.N. Prata - A global, dynamical formulation of quantum confined systems, *Proc. Eston. Acad. Sci.* 59 (2010), 290-293.
6. N.C. Dias, M. de Gosson, F. Luef, J.N. Prata - A deformation quantization theory for noncommutative quantum mechanics, *J. Math. Phys.* 51 (2010), 072101.
7. P. Freitas, B. Siudeja - Bounds for the first Dirichlet eigenvalue of triangles and quadrilaterals, *ESAIM: Control, Optimisation and Calculus of Variations* 16 (2010), 648-676.
8. P. Freitas, J.P. Matos - On the characterization of harmonic and subharmonic functions via mean-value properties, *Potential Anal.* 32 (2010), 189-200.
9. P.P. Kulish, N. Manojlović, M. Samsonov; A. Stolin - Bethe Ansatz for deformed Gaudin model, *Proceedings of the Estonian Academy of Sciences* Vol 59, No. 4 (2010), 326-331.
10. P.P. Kulish, N. Manojlović, Z. Nagy - Jordanian deformation of the open XXX spin chain, *Theoretical and Mathematical Physics* Vol. 163 No. 2 (2010), 644-652.
11. P.P. Kulish, N. Manojlović, Z. Nagy - Symmetries of spin systems and Birman-Wenzl-Murakami algebra, *Journal of Mathematical Physics* Vol. 51, No. 4 (2010), 043516, 15 pages.
12. P.R.S. Antunes, S.S. Valtchev - An enriched MFS for scattering problems in planar domains with corners and cracks, *J. Computational Appl. Math.* 234 (2010), 2646-2662.

RESEARCH GROUP: STOCHASTIC ANALYSIS, PATH INTEGRALS AND APPLICATIONS

Publications in peer review Journals

1. J.C. Zambrini, N. Privault - Stochastic deformation of integrable dynamical systems and random time symmetry, *Journal of Mathematical Physics* 51 (1) (2010), 082104.
2. J. Rezende - The Sturm Liouville problem and the Polar Representation Theorem. *International Journal of Pure and Applied Mathematics* 61 (4) (2010), 467-494.
3. L.S. Cirio - Twisted noncommutative equivariant cohomology: Weil and Cartan models, *J. Geom. Phys.* 60, no. 9 (2010), 1170-1189.
4. N.V. Chemetov, F. Cipriano, S. Gavriluk - Shallow Water Model for Lakes with Friction and Penetration, *Math. Meth. Appl. Sci.* 33 (2010), 687-703.

5. S. Chaari, F. Cipriano, H.-H. Kuo, H. Ouerdiane - Surface measures on the dual space of the Schwartz space, *Communications on Stochastic Analysis* 4 (3) (2010), 467-480.
6. V. Dragovic - Geometrization and Generalization of the Kowalevski top, *Communications in Mathematical Physics* 298 (1) (2010), 37-64.
7. V. Dragovic - Poncelet-Darboux curves, their complete decomposition and Marden theorem, *International Math. Res. Notes* 229 (2010).
8. V. Dragovic, M. Radnovic - Integrable Billiards and Quadrics, *Russian Math. Surveys* 65 (2) (2010), 319-379.

Other publications

(Include only Books, chapters or full papers published in conference proceedings)

1. V. Dragovic, M. Radnovic - Integrable billiards, Quadrics and Higher-dimensional Poncelet Porisms, [in Russian], *Regular and Chaotic Dynamics*, Moscow-Izhevsk (2010), 340 pages.
2. J. Rezende; L. Monteiro; E. Amaral - António Aniceto Monteiro: Uma fotobiografia a várias vozes. Edited by SPM (Sociedade Portuguesa de Matemática), 2007.
<http://antonioanicetomonteiro.blogspot.com/2007/05/antnio-aniceto-monteiro.html>
3. J. Rezende, Puzzles with polyhedra and numbers (BGS Colloquium XI, 2008 Museu da FCUL, 23-26 Abril 2008). Publicado nas Actas, 2009, 103-131, Edição LUDUS: <http://ludicum.org/bgs08/bgs08-proceedings.pdf>
4. J. Rezende. Puzzles com poliedros e números - Bol. Soc. Port. Mat. Special Number. January 2007.
5. J. Rezende - Angola e António Aniceto Monteiro (Talk in the "Colloquium António Aniceto Monteiro", 4 June 2007), published in a special number of SPM's Bulletin on the occasion of the centenary of António Aniceto Monteiro's birth, 2008.
6. J. Rezende - O que há para além das imagens. Boletim da Sociedade Portuguesa de Matemática in honour of Mira Fernandes, 2010.